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○ INTRODUCTION.

This REVIEW is based on reports for April, 1890, from 2,296 regular and voluntary observers. These reports are classified as follows: 170 reports from Signal Service stations; 124 reports from United States Army post surgeons; 1,423 monthly reports from state weather service and voluntary observers; 23 reports from Canadian stations; 180 reports through the Central Pacific Railway Company; 376 marine reports through the co-operation of the Hydrographic Office, Navy Department; marine reports through the "New York Herald Weather Service;" monthly weather reports from the local weather services of Alabama, Arkansas, Colorado, Illinois,

Indiana, The Iowa Weather Crop Bulletin Service, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Meteorological Report of the Missouri State Board of Agriculture, Nebraska, Nevada, New England, New Jersey, New York, North Carolina, North and South Dakota, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, and Texas, and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

Reports of rainfall observations of the United States Geological Survey in Colorado, New Mexico, and Arizona were not received for April, 1890.

○ CHARACTERISTICS OF THE WEATHER FOR APRIL, 1890.

The great flood in the lower Mississippi valley continued throughout the month. On the 1st the river was rising at Cairo, Ill., and Memphis, Tenn., and was nearly stationary or falling slowly from Memphis to New Orleans. The breaks at Offutt and Skipwith, Miss., had flooded the southern part of Washington, Issaquena, and western Sharkey counties, Miss.; Huntington, Bolivar Co., Miss., was inundated; and the land back of Rolling Fork and Mayersville, Miss., was flooded. In Louisiana water from the Nita crevasse covered the greater portion of Saint James, Saint Charles, Saint John, and Jefferson parishes as early as the 4th of the month, and on the 13th it reached the Illinois Central Railroad, and within twenty-four hours had covered the tracks for twenty miles. A large amount of water from this crevasse found its way into Lake Pontchartrain by means of the Manchac Passes. The Austin, Miss., crevasse, which occurred March 30th, overflowed about 10,000 acres in Mississippi. On the Arkansas side of the river about 10,000 acres were inundated. The following are the more important crevasses reported for April: On the 4th a crevasse occurred at Catfish Point, Miss., which rapidly widened to fifteen hundred feet; several thousand acres of cultivated land were submerged, many houses washed away, and much stock drowned. On the 7th the Opossum Fork levee, seventy-seven miles above Vicksburg, Miss., was cut, and great damage was done to adjacent property. On the 21st the upper end of the old Morganza levee, Pointe Coupee parish, La., gave way, and crevasses occurred in the levees of the Pointe Coupee front from the 22d to the 25th, that of the 25th in the lower Morganza levee being twelve hundred feet wide. The Pointe Coupee levees protected the sugar belt and were the most important in Louisiana, or in the entire Mississippi system. The principal of these was the great Morganza levee, which was the first to go, and it was closely followed by numerous other breaks, and practically the entire parish was flooded. At the close of the month not less than fifteen parishes, or about one-fourth of the state of Louisiana, had been affected by the flood, and the country generally between the Mississippi and Ouachita rivers was under water. On the 3d the water reached 48.7 feet on the gauge at Cairo, Ill., where

it remained nearly stationary until the 6th; this was the highest water reached at that point during the current month. On the 3d the river again reached the danger-point, 35.6 feet, at Memphis, Tenn. On the 22d the highest water of the month, 31.9 feet, was reported at Plaquemine, La. On the 23d the Red River fell below the danger-point, 29.9 feet, at Shreveport, La., and the highest water of the month, 48.55 feet, occurred at Natchez, Miss. On the 24th the highest water of the month, 45.1 feet, occurred at Saint Joseph, La. On the 28th the Red River had again reached the danger-line at Shreveport, La., and at the close of the month had risen to 30.6 feet, the highest point reached this year. At the close of the month the river was 3.8 feet below the danger-line at Cairo, Ill., and rising; 4.4 feet above at Memphis, Tenn., and rising; 4.3 feet below at Helena, Ark., and falling; 8.6 feet above at Vicksburg, Miss., and falling; 1.7 foot above at New Orleans, La., and falling. At Shreveport, La., the Red River was 1.6 foot above the danger-line and rising. The Arkansas River was 2.5 feet above the danger-line at Fort Smith, Ark., and falling, and 1.3 foot above at Little Rock, Ark., and falling. The Ohio River fell below the danger-line at Louisville, Ky., on the 1st.

The highest temperature noted at a regular station of the Signal Service was 98°, at Yuma, Ariz., on the 28th, and temperature rising to 105° on the 30th was reported by the voluntary observer at Gové City, Kans. The lowest temperature reported was -17°, at Pokegama Falls, Minn., on the 1st. The month was warmer than the average April, except in the extreme northeastern and southeastern, the south-central, and extreme northwestern parts of the country, and along the immediate middle and south Pacific coasts. The greatest departures above the average temperature occurred on the North Carolina coast and within an area extending from northwestern Minnesota southwestward over North Dakota, where they were more than 5°, and the most marked departures below the average temperature were noted on the north Pacific coast, where they averaged more than 2° and exceeded 6° at a seven-year record station. At stations in North Carolina, Iowa, and Nebraska, the mean temperature was higher than previously noted for April; at stations in the south Atlantic states, the